

WHAT IS CLAIMED IS:

1 1. A method for transmitting a data packet, with data to be transmitted
2 in said packet supplied from a data source, said method comprising the steps of:
3 requesting a buffer to store data to be transmitted;
4 upon starting packet transmission, configuring said buffer as a FIFO
5 buffer;
6 while said buffer is configured as a FIFO:
7 storing data supplied by the data source;
8 outputting transmit data to be transmitted in said packet;
9 asserting a valid signal when data to be transmitted is stored in the
10 buffer;
11 starting a data-under-run timer set to a timeout interval if the valid signal is
12 not asserted;
13 abandoning packet transmission if the under-run timer times out because
14 the valid signal is not reasserted prior to the time out interval;
15 if the packet transmission is abandoned, reconfiguring said buffer as a
16 STORE-AND-FORWARD buffer to store all data to be transmitted provided by said data
17 source prior to outputting data to be transmitted in a packet; and
18 restarting packet transmission subsequent to storing all data to be
19 transmitted in said buffer.

1 2. The method of claim 1 where said step of abandoning further
2 comprises the act of:
3 terminating a packet with a special symbol indicating that the packet is not
4 to be processed or reported in error by intermediate routing nodes or its destination.

1 3. A system for implementing a speculative transmit function
2 comprising:
3 a session block which responds to packet transmit requests and includes
4 logic for requesting a logical buffer to buffer a transmit packet, for writing data to the
5 logical buffer, and for sending a START signal to begin packet transmission;
6 a logical buffer;

9 configuration logic responsive to said START signal to configure the logical buffer as
10 FIFO buffer, and asserting a DATA_VALID signal when data has been loaded into the
11 logical buffer and is ready to transmit, and responsive to an ABANDON signal to
12 configure the logical buffer as a STORE-AND-FORWARD buffer;
13 a transmit protocol block including logic for pulling data from said logical
14 buffer when configured as a FIFO, for starting a timer that measures a fixed time interval
15 when the DATA_VALID signal is not asserted, and for asserting the ABANDON signal
16 if the timer indicates that the fixed time interval has expired.

1 4. A system for implementing a speculative transmit function
2 comprising:

3 a session block which responds to packet transmit requests and includes
4 logic for requesting a logical buffer to buffer a transmit packet, for writing data to the
5 logical buffer, and for sending a START signal to begin packet transmission;

6 a logical buffer;

7 a transmit buffer block, coupled to said session block and said logical
8 buffer, for managing the buffer, including buffer writing circuitry and buffer

9 configuration logic responsive to said START signal to configure the logical buffer as
10 FIFO buffer, and asserting a DATA_VALID signal when data has been loaded into the
11 logical buffer and is ready to transmit, and responsive to an ABANDON signal to
12 configure the logical buffer as a STORE-AND-FORWARD buffer;

13 a transmit protocol block including logic for pulling data from said logical
14 buffer when configured as a FIFO, and for asserting the ABANDON signal when the
15 DATA_VALID signal is not asserted.